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CLAIMS

1. A ligand-binding domain of an Eph family RTK.
2. A ligand-binding domain according to Claim 1 wherein the Eph-family RTK is HEK.
3. A ligand-binding domain according to Claim 1 which is capable of binding LERK7.
4. A ligand-binding domain of an Eph-family RTK which has at least one disulphide bond involving cysteine residues corresponding to conserved cysteine residues in HEK which are selected from the group consisting of:-
- (i) Cys₇₁-Cys₁₈₉;
 - (ii) Cys₂₅₇-Cys₂₇₀;
 - (iii) Cys₂₅₉-Cys₂₇₀;
 - (iv) Cys₃₀₈-Cys₃₂₂; and
 - (v) Cys₃₆₂-Cys₃₆₅.
5. A ligand-binding domain which has an amino acid sequence encoded by exon III of a gene encoding an Eph family RTK.
6. A ligand-binding domain according to Claim 5 wherein the ligand-binding domain further includes an amino acid sequence encoded by exon II of said gene.
7. A ligand-binding domain of an Eph family RTK which has an amino acid sequence encoded by exon I, exon II and exon III of said gene.
8. A ligand-binding domain of an Eph family RTK which has amino acids 52-271 of the sequence shown in FIG. 1.
9. A ligand-binding domain of an Eph family RTK which further includes one or more of amino acids 30-51 of the sequence shown in FIG. 1.
10. A ligand-binding domain of an Eph family RTK which has amino acids 1-271 of the sequence shown in FIG. 1.
11. A polypeptide homolog of a ligand-binding domain of an Eph

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family RTK.

12. A peptide corresponding to a sub-sequence of an amino acid sequence according to Claim 10.

13. A polynucleotide sequence as shown in FIG. 1.

14. A homolog of a polynucleotide sequence according to Claim

13.

15. An expression construct which has a polynucleotide sequence according to Claim 13 or Claim 14 ligated into an expression vector.

10 16. An expression construct as claimed in Claim 15, wherein the expression vector is pEFBOS.

17. A host cell transfected with the expression construct of Claim 16.

18. A host cell according to Claim 17, wherein the host cell is a

15 CHO cell.

19. A host cell according to Claim 17, wherein the host cell is a COS 7 cell.

20. A recombinant polypeptide produced by the host cell of Claim 18 or Claim 19.

20 21. A method of identifying a molecule which binds an Eph family RTK, which method includes the steps of:-

(i) combining a sample suspected of containing said molecule and at least a ligand-binding domain of said Eph family RTK; and

25 (ii) determining if said molecule is present in said sample by measuring binding of the molecule to the ligand-binding domain.

22. A method of identifying a molecule which competes with binding of a ligand to a ligand-binding domain of an Eph-family RTK, which method includes the steps of:-

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(i) combining a sample suspected of containing the

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molecule, a ligand and at least the ligand-binding domain of said Eph family RTK; and

- (ii) determining if the molecule is present in the sample according to whether the molecule competes with the ligand for binding to the ligand-binding domain.

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23. A method according to Claim 21 or Claim 22, wherein a BIACore system is used to detect binding to the ligand-binding domain of an Eph family RTK.

24. A method according to ^{claim 22} any one of Claims 22-23, wherein the Eph family RTK is HEK.

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25. An Eph family RTK antagonist.

26. An antagonist according to Claim 25, wherein the antagonist is a ligand-binding domain of an Eph family RTK.

27. A HEK RTK antagonist.

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28. An antagonist according to Claim 27 wherein the antagonist is a ligand-binding domain of HEK.

29. An agonist which binds an Eph family RTK.

30. An agonist which binds HEK RTK.

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31. A method of determining whether or not an mRNA encodes an intact Eph family RTK ligand-binding domain, which method comprises the steps of:-

(i) introducing the mRNA into a zebrafish embryo at the one-cell, two-cell, or four-cell stage; and

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(ii) detecting defects, if present, in early embryogenesis in the zebrafish embryo, said defects being indicative of said gene transcript encoding said intact ligand-binding domain.

32. A method of determining whether or not an mRNA encodes an intact ligand for an Eph family RTK, which method comprises the steps of:-

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(i) introducing the mRNA into a zebrafish embryo at the

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one-cell, two-cell, or four-cell stage; and

- (ii) detecting defects, if present, in early embryogenesis in the zebrafish embryo, said defects being indicative of said mRNA encoding said intact ligand.

5 33. A method of identifying the site of functional effects of interaction between an Eph family RTK ligand-binding domain and a ligand, which method has the steps of-

- 10 (i) Injecting zebrafish embryos with mRNA encoding a ligand-binding domain of an Eph family RTK; and
- (ii) subjecting the embryos to *in situ* hybridisation with probes to *Hlx-1*, *Paxb*, *Krox20* and/or *MyoD*, and detecting patterns of *in situ* hybridisation consistent with aberrant gene expression.

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